

ABSTRACT:

In several types of audio coding a frequency of one or more periodical components is determined and used in the encoding process.

A first example is a coding method in which the audio signal is represented by a plurality of sinusoids from which the frequency and the amplitudes are determined by means of an analyzer (10). These amplitudes and frequencies are then transmitted to the decoder (20) which comprises a synthesizer (24) which reconstructs the audio signal on basis of the amplitudes and frequencies of determined by the analyzer (10).

A second example is a pitch based audio coding method, which is particularly suited for encoding speech signals. In such a pitch based encoding system, the pitch is determined in a pitch detector (8) and transmitted to the receiver (16). Besides the pitch, also the structure of the spectrum of the speech signal is transmitted to the receiver (16). The structure of the spectrum is often transmitted in the form of LPC parameters, such as LAR's (Log Area Ratios) or LSP's (Line Spectral Pairs).

In practical audio signals, the frequency of the periodical component to be determined is not always constant, but may slightly vary over an analysis interval. To correct for said frequency change, the system according to the invention comprises frequency change determining means (8) which determine a change of the frequency of the periodical component over the analysis period. This change of frequency can be transmitted to the decoder for increasing the accuracy of the reconstruction of the audio signal. Also it is possible that the frequency change is only used to obtain a more accurate value of the pitch.

Preferably the frequency change is determined by using a time warper (6) which performs a time transformation such that a time transformed audio signal is obtained with a minimum frequency change.